



# Vaping, JUUL and E-Cigarettes: A Public Health Crisis

Olathe Public Schools  
Sept. 27, 2019

# A Public Health Crisis

Sept. 18, 2019

Former FDA Commissioner Dr. Scott Gottlieb:

*"We have an obligation to act on what we know. And what we know is very disturbing. Kids use of e-cigarettes has reached an epidemic level of growth."*

# A Public Health Crisis

- In 2018, 20.8% of U.S. high school students used e-cigarettes in the past month.
- E-cigarettes are the **most popular** tobacco product used by adolescents.
- Rate of use increased by **78%** from 2017-18.

Wang TW. MMWR (2018)



# Electronic Nicotine Delivery Systems



Image Source: FDA

Cig-a-likes   Vape Pens   Mods   Advanced Personal Vaporizers   E-cigars/Pipes   Pod Systems



# E-Liquid

- Nicotine (0-59+ mg/ml)
- Propylene Glycol
- Vegetable Glycerin
- Flavoring
- Other compounds



Nicotine Intake: 1 JUUL pod = 2 packs of cigarettes



# Nicotine Addiction

- E-cigarettes deliver higher levels of nicotine than traditional cigarettes.
- Pod system e-liquids (including JUUL): **59+ mg/ml**
- Of JUUL users, **63%** do not know that the product always contains nicotine.

USDHHS. E-Cigarette Use  
Among Youth and Young Adults:  
A report of the Surgeon General.  
(2016)

Source: [www.juul.com](http://www.juul.com)

Willett JG. *Tobacco Control* (2018)





# Nicotine Addiction

- Nicotine Salts
- Free base nicotine + benzoic acid
- May allow nicotine to be delivered at higher concentrations without throat irritation.
- The adolescent brain is uniquely vulnerable to the effects of nicotine.

Duell AK et. al. *Research in Toxicology* (2018)

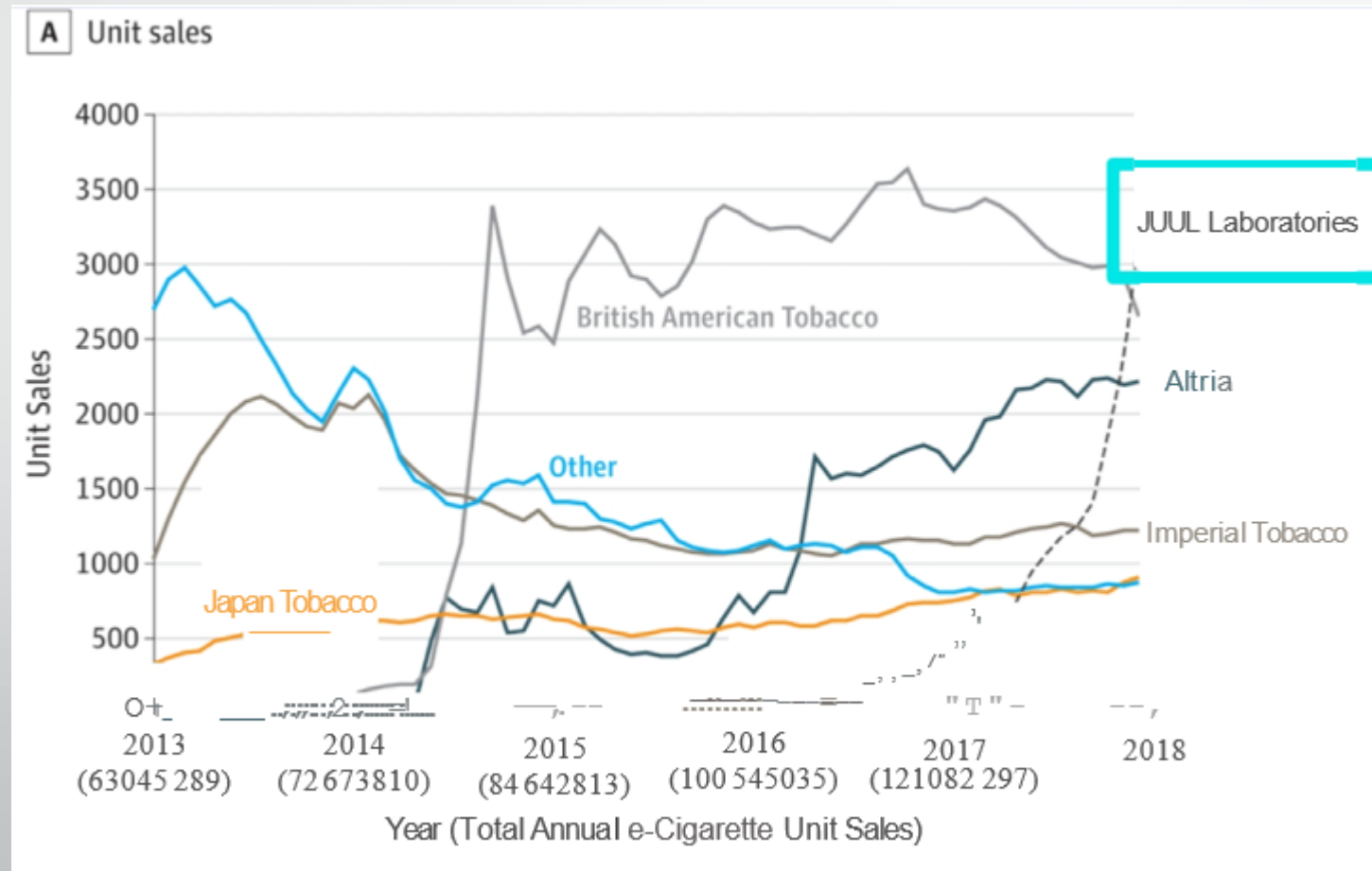
USDHHS. *Health Consequences of Smoking. 50 Years of Progress. A Report of the Surgeon General* (2014)





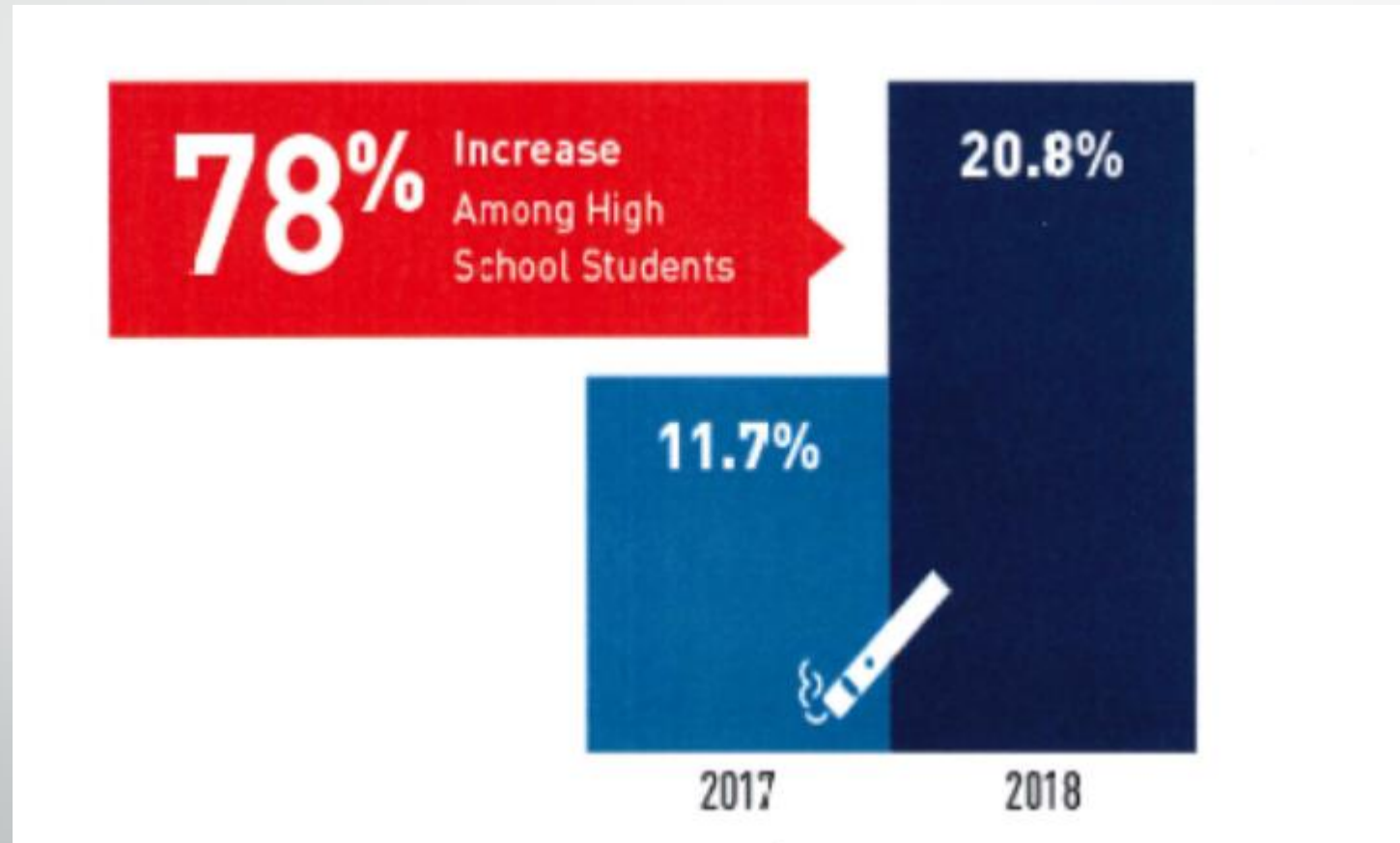
# Electronic Cigarette Sales in the United States, 2013-17

JAMA. 2018;320(13):1379-80. doi:10.1001/jama.2018.10488

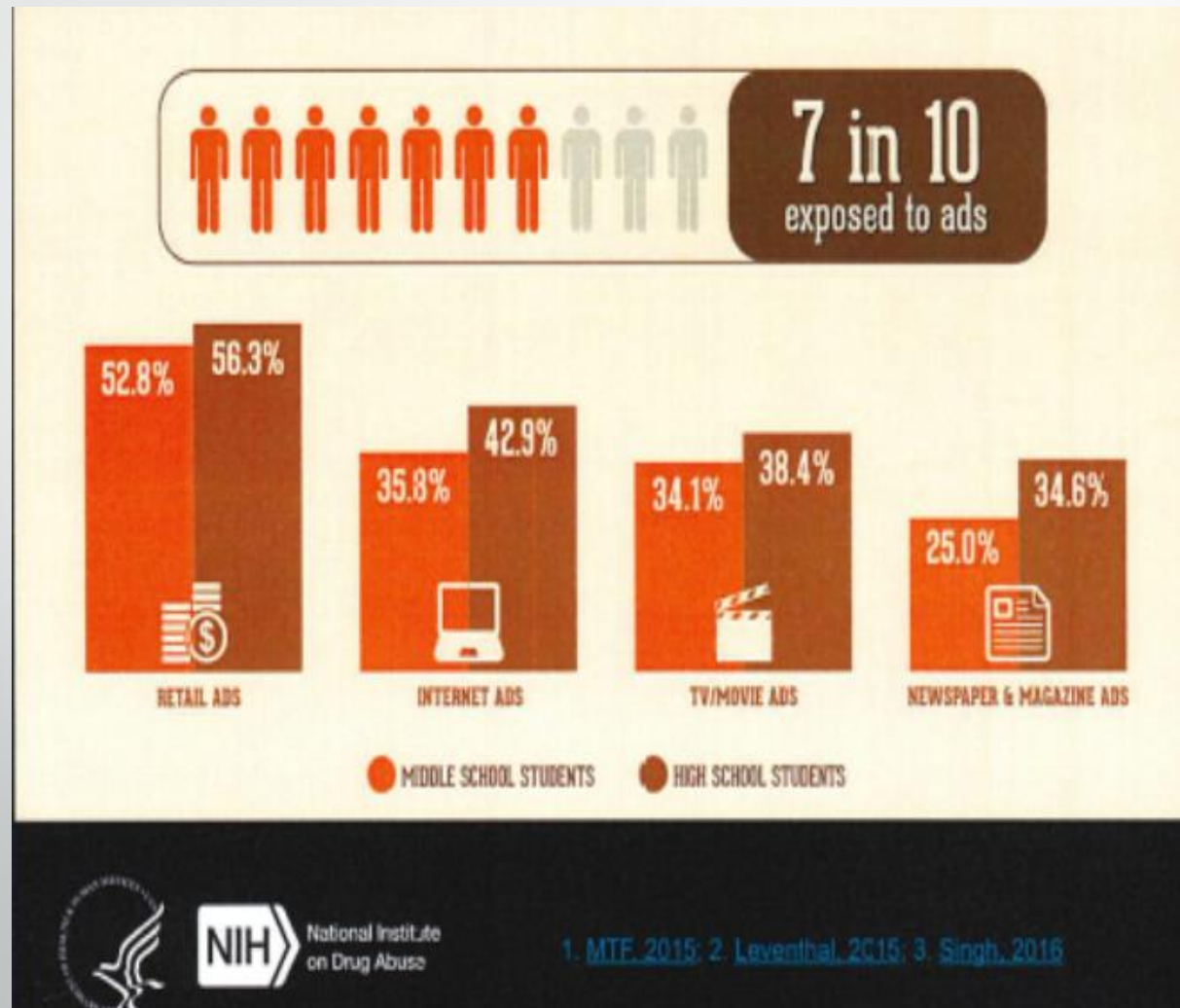


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# Surge in Youth Current E-Cigarette Use



# High Teen Exposure to E-Cigarette Advertising



# A Public Health Crisis

Former FDA Commissioner Dr. Scott Gottlieb:

*"I hope [JUUL] recognize[s] the problem that's been created has created largely by their product."*



# Impact on Schools

- **Negatively impacts the educational process**
- **Distraction.** Major distraction for students, teachers and administrators
- **Drain of resources.** Teachers and administration spend a significant amount of time monitoring and policing vaping in school. Time and energy that could and should be spent elsewhere.
- **Policing.** Requires increase monitoring of halls and bathrooms, monitoring devices, test kits to test contents of confiscated devices, involvement of local police.
- **Discipline.** Stiff punishments necessary to deter student use. Suspensions skyrocket.

# Sources

- The facts and images that appear in this presentation are taken from a presentation by the American Academy of Pediatrics, Julius B. Richmond Center of Excellence unless otherwise noted.